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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,259	01/02/2002	Anna Charny	CISCP731	7467

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EXAMINER	
SERRAO, RANODHI N	

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/038,259	CHARNY ET AL.	
	Examiner	Art Unit	
	Ranodhi Serrao	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The reference US2002/0067963 in form 1449 mailed on 02 June 2003 does not belong to Kodialam and therefore was not considered. The examiner assumes the correct number is US2002/0067693 which belongs to Kodialam. Corrected IDS should be sent for consideration.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "106" has been used to designate several items in figure 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 4, 5, 7, 12, 16, 19, 20, 25, 28, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Kinoshita et al. (2002/0172149).

5. As per claims 1, 12, 16, and 25, Kinoshita et al. teaches in a data communication network, a method for protecting a node (paragraph 0002), said method comprising processes of: providing a backup bandwidth pool on links of said data communication network (paragraph 0073); identifying a link pair traversing said node, said link pair having a bandwidth to be protected (paragraph 0067); establishing as a backup for said link pair a set of one or more paths that do not include said node (paragraph 0073) and wherein said one or more paths collectively have backup bandwidth greater than or equal to said bandwidth to be protected (paragraph 0012); deducting, for each link included in said set of paths, from backup bandwidth available for protecting said node, while not deducting from backup bandwidth available for protecting other nodes in said data communication network (paragraph 0116); and repeating said processes of identifying, establishing, and deducting for a plurality of link pairs traversing said node without exceeding available backup bandwidth of links used in establishing said backups (paragraph 0126).

6. As per claims 4, 19, and 28, Kinoshita et al. teaches a method wherein said set of one or more paths comprises one or more label switched paths (paragraph 0156).

7. As per claim 5, Kinoshita et al. teaches a method wherein said processes of identifying and establishing occur under control of said node (paragraph 0024).

8. As per claims 7, 20, and 29, Kinoshita et al. teaches a method further comprising: signaling said backups to other nodes adjacent to said node in said data communication network (paragraph 0068).

9. Claims 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Kodialam et al. (2002/0067693).

10. As per claims 33-36, Kodialam et al. teaches a method, apparatus, and computer program product for protecting a node in a data communication network (paragraph 0073), said method comprising: performing computations at said node to identify backup tunnels to protect said node (paragraph 0032); and signaling said backup tunnels to other nodes of said data communication network (paragraph 0008).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 2, 3, 6, 8, 11, 13-15, 17, 18, 21, 26, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al. (2002/0172149) and Kodialam et al.

13. As per claims 2, 13, 17, and 26, Kinoshita et al. teaches the mentioned limitations of claims 1, 12, 16, and 25 above but fails to teach a method wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair. However, Kodialam et al. teaches a method wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair (see Kodialam et al, paragraph 0055). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to a method wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair in order to employ a local restoration model to determine the allocation of, and, in operation, to switch between, a primary (also termed active) path and a secondary (also termed backup) path based upon detection of a network failure (see Kodialam et al., paragraph 0014).

14. As per claims 3, 14, 18, and 27, Kinoshita et al. teaches the mentioned limitations of claims 1, 12, 16, and 25 above but fails to teach a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair. However, Kodialam et al. teaches a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair (see Kodialam et al., paragraph 0032). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify

Kinoshita et al. to a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair in order to guarantee minimum bandwidth for the path of a packet flow through the network (see Kodialam et al., paragraph 0008).

15. As per claim 6, Kinoshita et al. teaches the mentioned limitations of claim 1 above but fails to teach a method wherein said processes of identifying and establishing occur under control of a computer independent of said node. However, Kodialam et al. teaches a method wherein said processes of identifying and establishing occur under control of a computer independent of said node (see Kodialam et al., paragraph 0073). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to a method wherein said processes of identifying and establishing occur under control of a computer independent of said node in order to route data through a network having a plurality of nodes interconnected by a plurality of links represented by a graph (paragraph 0015).

16. As per claims 8, 15, 21, and 30, Kinoshita et al. teaches a method for operating a data communication network to provide protection to nodes in said data communication network, said method comprising: maintaining, for each of a plurality of links in said data communication network, a primary bandwidth pool and a backup bandwidth pool (see Kinoshita et al., paragraph 0073); and establishing backup nodes to protect a plurality of nodes of said network (see Kinoshita et al., paragraph 0156), each of said backup nodes consuming backup bandwidth from backup bandwidth pools of selected ones of said plurality of links (see Kinoshita et al., paragraph 0012); and wherein all backup

protecting any particular node of said network do not consume more bandwidth on any link than provided by the link's backup bandwidth pool (see Kinoshita et al., paragraph 0116). But fails to teach backup tunnels and wherein there is at least one set of backup tunnels that protect disparate nodes and that consume more bandwidth on at least one link than provided by said at least one link's backup bandwidth pool. However, Kodialam et al. teaches backup tunnels (see Kodialam et al., paragraph 0024) and wherein there is at least one set of backup tunnels that protect disparate nodes (see Kodialam et al., paragraph 0030) and that consume more bandwidth on at least one link than provided by said at least one link's backup bandwidth pool (see Kodialam et al., paragraph 0060). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to backup tunnels and wherein there is at least one set of backup tunnels that protect disparate nodes and that consume more bandwidth on at least one link than provided by said at least one link's backup bandwidth pool in order to allow all nodes in the network to have partial network information available to its routing algorithm (see Kodialam et al., paragraph 0032).

17. As per claims 9, 10, 22, 23, 31, and 32, the above-mentioned motivation of claim 8 applies fully in order to combine Kinoshita et al. and Kodialam et al.

18. As per claims 9, 22, and 31, Kinoshita et al. and Kodialam et al. teach a method wherein at least one of said backup tunnels comprises a label switched path (see Kinoshita et al., paragraph 0156).

19. As per claims 10, 23, and 32, Kinoshita et al. and Kodialam et al. teach a method wherein establishing backup tunnels comprises: signaling said backup tunnels to

adjacent nodes of each protected node (see Kinoshita et al., paragraphs 0068 and 0156).

20. As per claims 11 and 24, Kinoshita et al. teaches the mentioned limitations of claims 8 and 21 above but fails to teach a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node. However, Kodialam et al. teaches a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node (see Kodialam et al. paragraph 0028). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node in order to reserve link bandwidth and establish an NTP (see Kodialam et al., paragraph 0008).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are disclosed in the Notice of References Cited and teach numerous other ways of implementing an implicit shared bandwidth protection for fast reroute, thus a close review of them is suggested.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ranodhi Serrao whose telephone number is (571)272-7967. The examiner can normally be reached on 8:00-4:30pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER